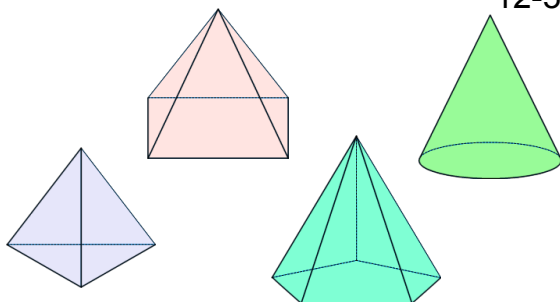
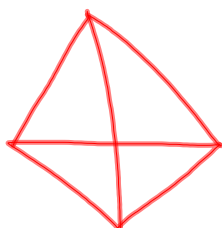
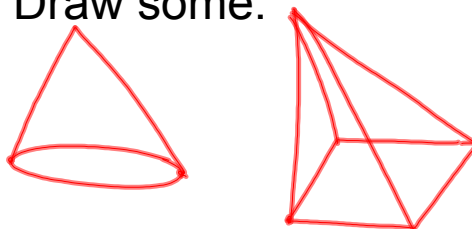


Pyramids and Cones 12-3 12-5



Draw some.



Pyramids

lateral faces--triangles

Sketchup_square

Sketchup-triangle

altitude-height

slant height *(ht of a lateral face)*
l

regular pyramid

- base regular polygon
- lateral edges congruent
- lateral faces congruent isosceles triangles
- altitude goes to the center of base

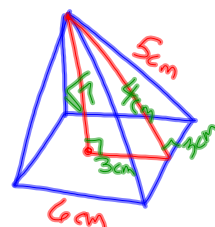
$$LA = \frac{1}{2} pl$$

$$SA = LA + B$$

$$V = \frac{1}{3} Bh$$

Square pyramid

side is 6cm
lateral edge is 5cm



$$5^2 = 3^2 + l^2$$

$$4^2 = 3^2 + h^2$$

$$p = 24cm$$

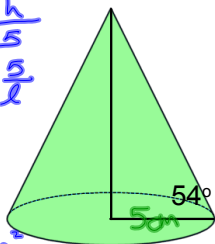
$$B = 36cm^2$$

$$LA = \frac{1}{2} pl = \frac{1}{2} 24 \cdot 4 = 48cm^2$$

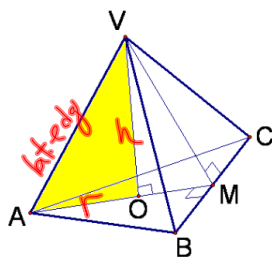
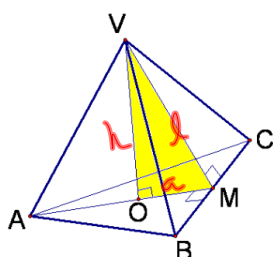
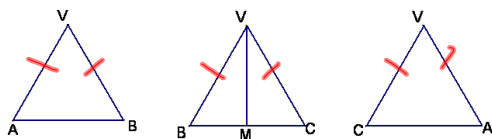
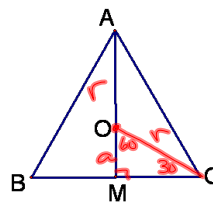
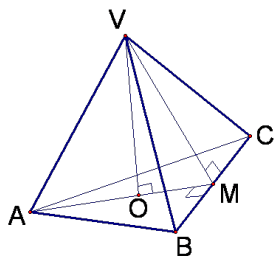
$$SA = 48 + 36 = 84cm^2$$

$$V = \frac{1}{3} 36 \cdot \sqrt{7} = 12\sqrt{7}cm^3$$

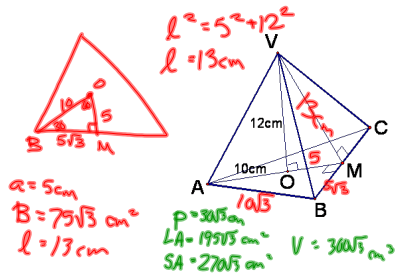
$r = 5\text{cm}$
 $l = 8.5\text{cm}$
 $h = 6.9\text{cm}$
 $C = 10\pi\text{cm}$
 $B = 25\pi\text{cm}^2$
 $LA = \frac{1}{2} 10\pi \cdot 8.5 = 133.5\text{cm}^2$
 $SA = 212.1\text{cm}^2$
 $V = \frac{1}{3} 25\pi \cdot 6.9 \approx 180.6\text{cm}^3$



WS



$p = 24\sqrt{3}\text{cm}$
 $LA = \frac{1}{2} p l = 60\sqrt{3}\text{cm}^2$
 $SA = 108\sqrt{3}\text{cm}^2$
 $V = \frac{1}{3} 48\sqrt{3} \cdot 3 = 48\sqrt{3}\text{cm}^3$



Oblique pyramids and cones use the same volume formula!

HW

p814-815

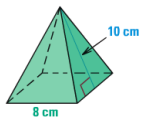
#s 3, 4, 6, 7, 22

p832-833

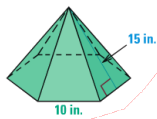
#s 3, 4, 6, 9, 14, 16, 21

AREA OF A LATERAL FACE Find the area of each lateral face of the regular pyramid.

3.

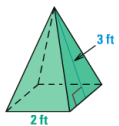


4.

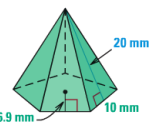


SURFACE AREA OF A PYRAMID Find the lateral area and surface area of the regular pyramid. Round your answers to two decimal places.

6.



7.

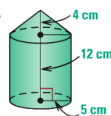


8.



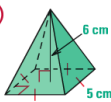
COMPOSITE SOLIDS Find the surface area of the solid. The pyramids are regular and the cones are right. Round your answers to two decimal places, if necessary.

22.

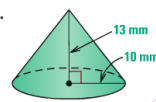


VOLUME OF A SOLID Find the volume of the solid. Round your answer to two decimal places.

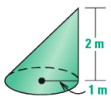
3.



4.



6.



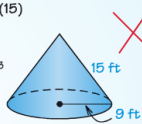
ERROR ANALYSIS Describe and correct the error in finding the volume of the right cone or pyramid.

9.

$$V = \frac{1}{3}\pi(9^2)(15)$$

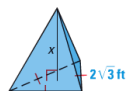
$$= 405\pi$$

$$\approx 1272 \text{ ft}^3$$



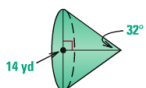
ALGEBRA Find the value of x.

$$14. \text{ Volume} = 7\sqrt{3} \text{ ft}^3$$



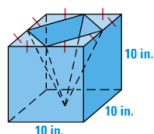
VOLUME OF A CONE Find the volume of the right cone. Round your answer to two decimal places.

16.



Find Volume

21.



Attachments

square_pyramid.skp

triangular pyramid slant height.skp